

Major Assignment

FIN10002 Financial Statistics

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3. Confidence Interval

3.1 Average price for the Eastern Metropolitan region only

Based on the observations, we are 95% confident that population mean of average price for the Eastern Metropolitan region only is **\$1,737,401.76** and **\$2,941,301.10**. The margin of errors shows that the sample means of **\$2,339,351.43** falls within the **\$601,949.67** of the actual population mean. The actual population mean is **\$2,099,543.75** accurately falls within the confidence interval. It suggests the sample accurately reflects the population.

3.2 Average distance from the CDB for unit/duplex only

Based on the observations, we are 95% confident that population mean of average distance from the CDB for unit/duplex only is **5.63km** and **10.15km**. The margin of errors shows that the sample means of **7.89km** falls within the **2.26km** of the actual population mean. The actual population mean is **7.89km** accurately falls within the confidence interval. It suggests the sample accurately reflects the population. The notable observation is that coincidence happen as sample means has same value as actual population mean despite differences in data size.

Appendix

Average price for the Eastern Metropolitan region only

Sample population mean table

<i>Price for the Eastern Metropolitan region</i>	
Mean	2339351.43
Standard Error	288571.53
Median	2007250
Standard Deviation	1322400.898
Sample Variance	1.74874E+12
Range	5986600
Minimum	821400
Maximum	6808000
Sum	49126380
Count	21
Confidence Level(95.0%)	601949.67

Lower Limit = Mean – Confidence Level

Lower Limit = $2339351.43 - 601949.67 = 1737401.76$

Upper Limit = Mean + Confidence Level

Upper Bound = $2339351.43 + 601949.67 = 2941301.10$

Confidence Interval = *between 1737401.76 and 2941301.10*

Actual population mean table

<i>Price of Eastern Metropolitan</i>	
Mean	2099543.75
Standard Error	16818.06
Median	1942500
Mode	2035000
Standard Deviation	848103.94
Sample Variance	7.1928E+11
Range	8717200
Minimum	532800
Maximum	9250000
Sum	5339139753
Count	2543

Average distance from the CDB for unit/duplex only

Sample population mean table

<i>Distance from the CDB for unit/duplex</i>	
Mean	7.89
Standard Error	1.12
Median	6.4
Mode	6.1
Standard Deviation	6.79
Sample Variance	46.05
Range	41
Minimum	0
Maximum	41
Sum	291.8
Count	37
Confidence Level(95.0%)	2.26

Lower Limit = Mean – Confidence Level

$$\text{Lower Limit} = 7.89 - 2.26 = 5.63$$

Upper Limit = Mean + Confidence Level

$$\text{Upper Bound} = 7.89 + 2.26 = 10.15$$

Confidence Interval = *between 5.63 and 10.15*

Actual population mean table

<i>Distance from the CDB for unit/duplex</i>	
Mean	7.89
Standard Error	0.08
Median	7.2
Mode	11.2
Standard Deviation	4.85
Sample Variance	23.55
Range	41
Minimum	0
Maximum	41
Sum	27549.7
Count	3491